Meningeal dissemination in primary CNS lymphoma: prospective evaluation of 282 patients

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Abstract: BACKGROUND: The impact of meningeal dissemination in primary CNS lymphoma (PCNSL) is debated, and the reported frequency varies. We prospectively evaluated the diagnostic value of PCR in comparison with CSF cytomorphology and MRI for diagnosing meningeal dissemination in PCNSL. METHODS: We evaluated 282 patients from a multicenter therapy study for PCNSL for the presence of meningeal dissemination: 205 with CSF cytomorphology, 171 with PCR of the rearranged immunoglobulin heavy-chain genes in CSF, and 217 with cranial MRI. RESULTS: Meningeal dissemination was found in 33 of 205 patients (16%) by cytomorphology, in 19 of 171 (11%) patients evaluated by PCR, and in 8 of 217 patients (4%) by MRI. Considering either of these methods, the relative frequency of meningeal dissemination was 17.4% (49 of 282 patients). PCR was monoclonal in 6 of 19 (32%) samples with positive cytomorphology, 1 of 13 samples (8%) with suspicious cytology, and in 10 of 105 (10%) cytologically negative samples. In 11 samples with positive and 12 with suspicious cytology, PCR showed only a polyclonal pattern. The probability of meningeal dissemination detection was higher in cases with CSF pleocytosis (>5/microL) with an OR of 2.48 (95% CI 1.15-5.34, p = 0.018). CSF protein had no predictive value for meningeal dissemination detection. CONCLUSIONS: We found a low rate of meningeal dissemination in primary CNS lymphoma in this large prospective study. The rate of discordant PCR and cytomorphologic results was high. Thus, the methods should be regarded as complementary. CSF pleocytosis had predictive value for meningeal dissemination detection.

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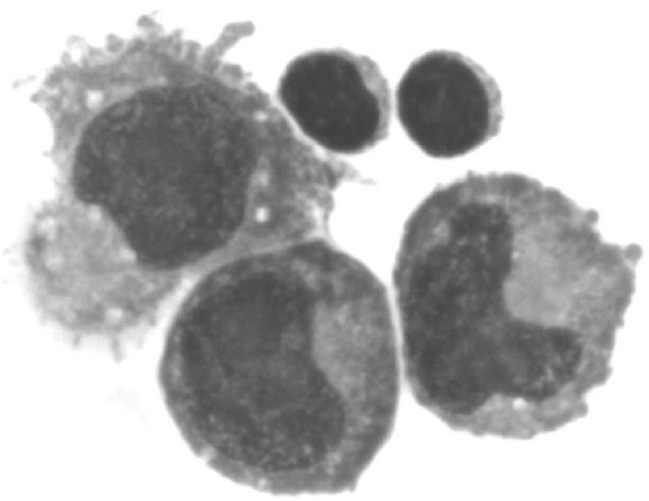

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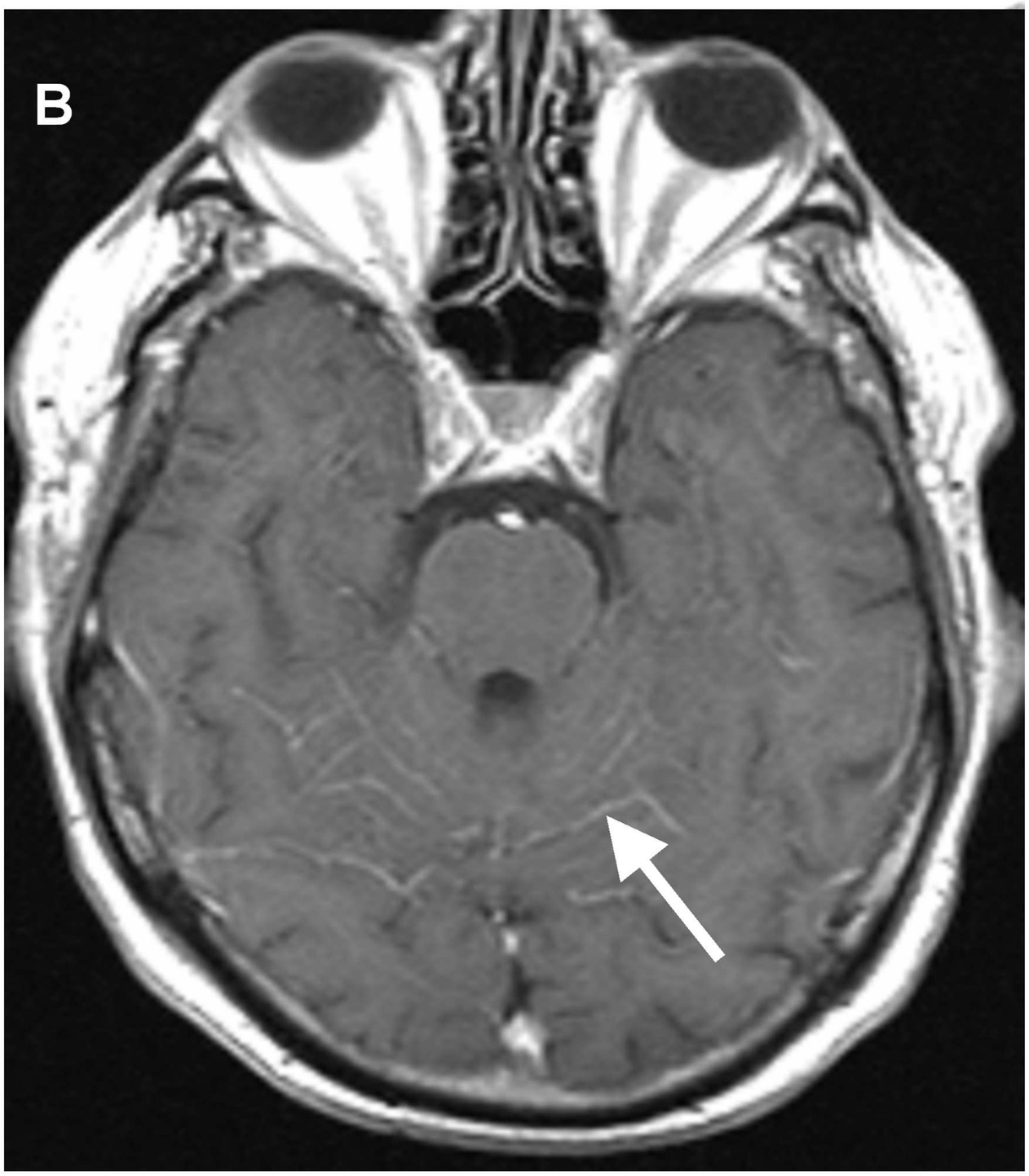

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